Coronary Heart Disease in Iowa, 2013

What is Coronary Heart Disease (CHD)?

Coronary Heart Disease (CHD) is a condition that reduces blood flow through the coronary arteries to the heart muscles.

Iowa's National Ranking for CHD Mortality Rate (2013)

43rd out of 50 States

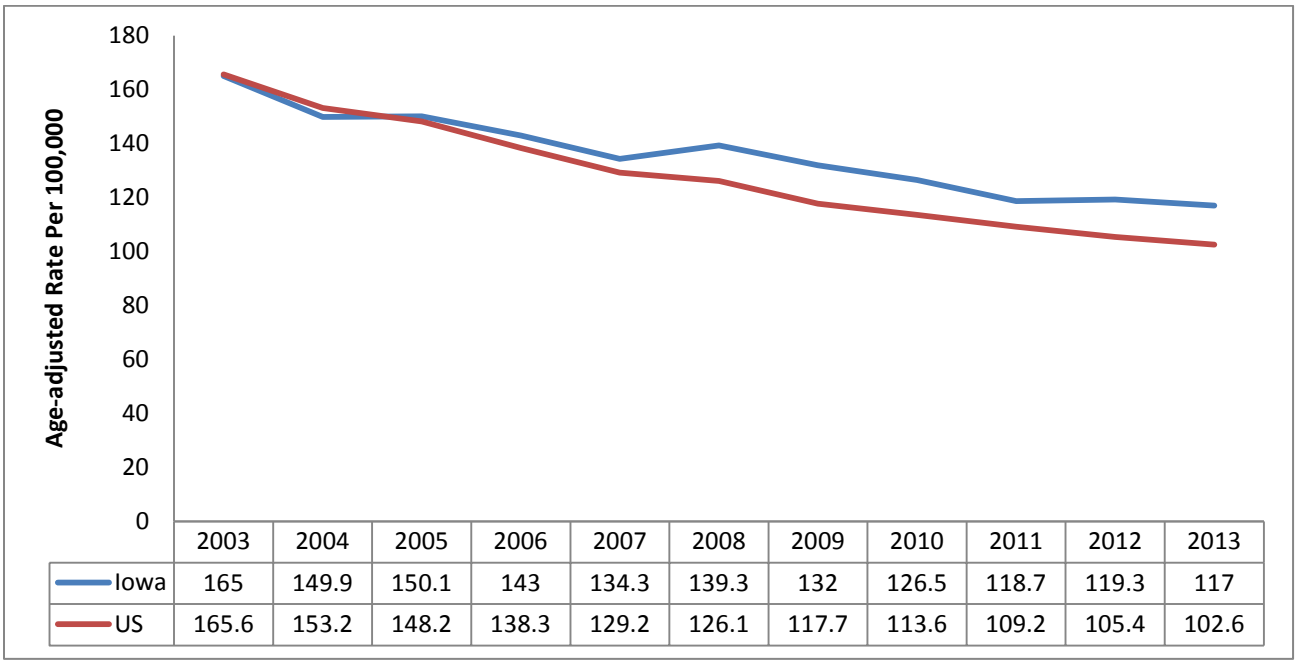
Significant Finding from Mortality Data

Despite the overall decrease in CHD deaths in Iowa, the death rates for males and females younger than 65 show no decrease in the past ten years.

Quick Facts

- 6,917 Iowans died of heart disease in 2013, the leading cause of death in Iowa since 1920. Among these heart disease deaths, 4,770 (69%) were due to CHD. CHD is responsible for about one of every five deaths in Iowa.
- CHD includes heart attack (acute myocardial infarction) and chest pain (angina pectoris). The male CHD death rate has always exceeded the female death rate. The male (159 deaths/100,000) to female (84/100,000) ratio was 1.9.
- The Iowa male CHD death rate was generally higher than the national male average; and since 2006, the Iowa female CHD death has exceeded the national female average.
- CHD is an age-related disease; 1,132 (43%) males vs. 450 (21%) females who died from CHD were younger than age 75.
- CHD is also a leading cause of premature, permanent disability in the Iowa workforce. It is estimated that about 110,000 Iowans have had a heart attack or coronary heart disease (Health in Iowa Annual Report from the 2013 BRFSS), 3.6% of total Iowa population.
- Iowa has had a 29% reduction in the CHD death rate since 2003 (from 165/100,000 in 2003 to 117/100,000 in 2013), and has met the national Healthy People 2010 objective of reducing the CHD death rate to 162/100,000 since 2004. The State of Iowa will continue to work towards the 2020 goal of 103.4 deaths per 100,000.
- Like mortality data, CHD hospitalization rates have declined over time; however, the average hospitalization charges for CHD have increased.
- More than two-thirds (69%) of CHD hospitalizations were covered by government funds (i.e. Medicaid or Medicare) as the first source of payment.

Figure 1: Coronary Heart Disease Death Rate, Iowa vs United States



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Iowa	165	149.9	150.1	143	134.3	139.3	132	126.5	118.7	119.3	117
US	165.6	153.2	148.2	138.3	129.2	126.1	117.7	113.6	109.2	105.4	102.6

Source: Age-adjusted rates before the year of 2008 are from http://wonder.cdc.gov/cmf-icd10.htm, icd10 I20-I25.

Iowa's CHD death rate decreased by 29% between 2003 to 2013, but was higher than the national average. This was the case for both males and females since 2007 (see Figure 2).

Figure 2: CHD Rate by Gender

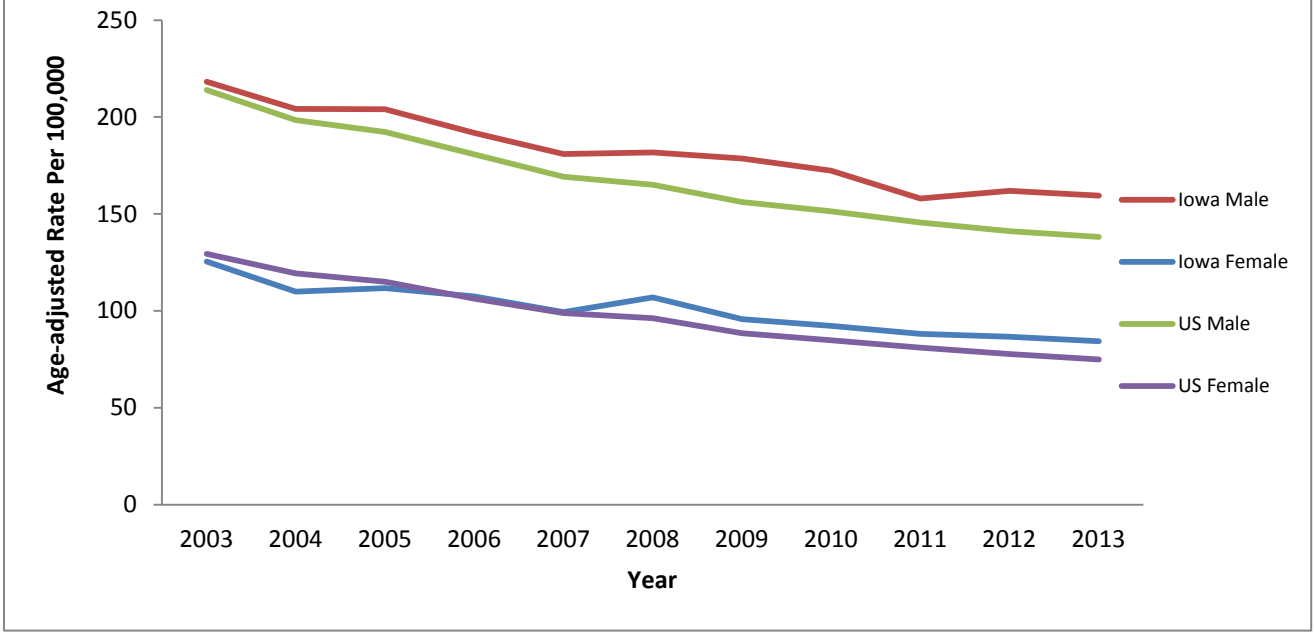
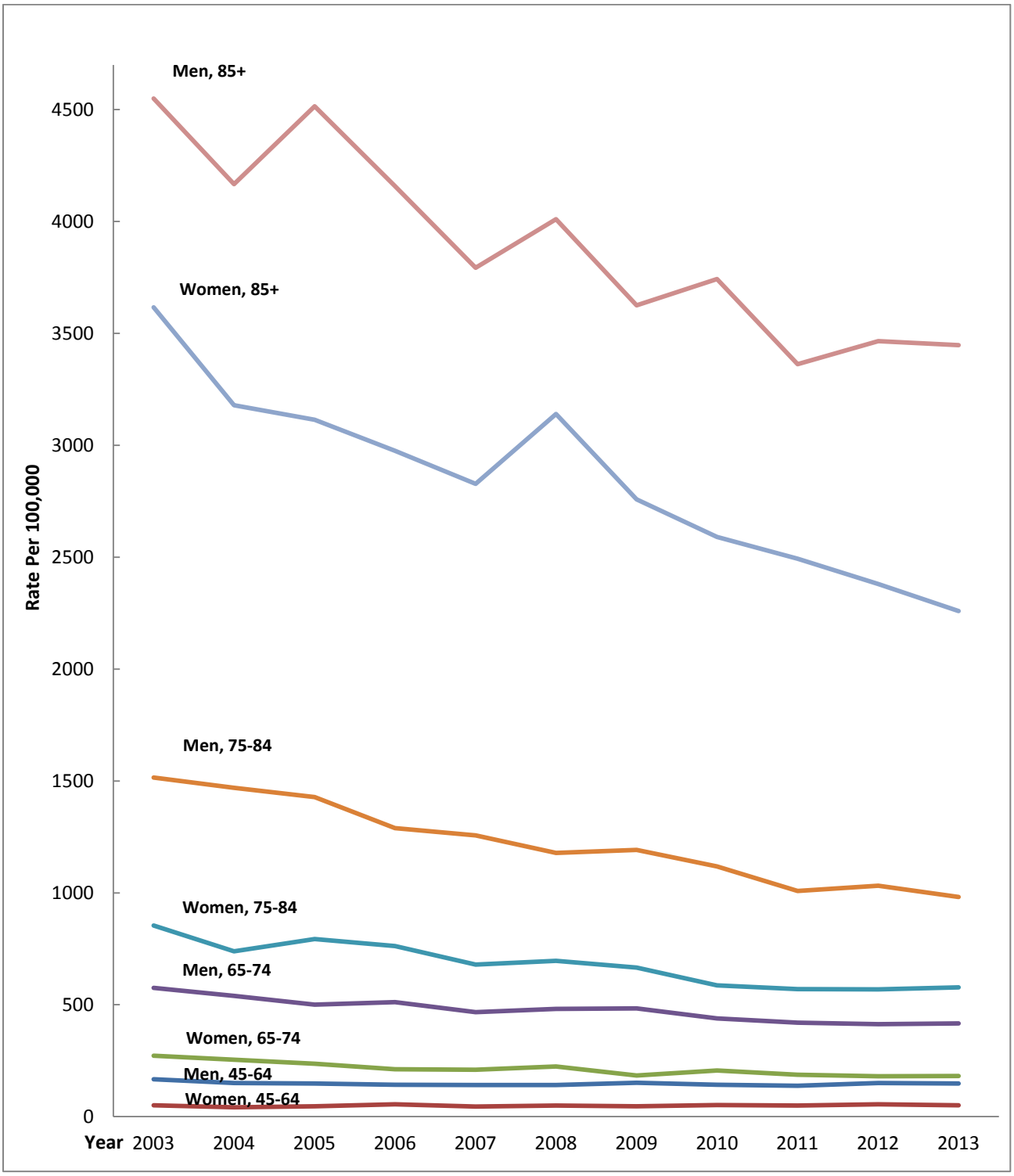


Figure 3: Coronary Heart Disease Death Rate by Specific Age Group, Iowa



Despite the overall decrease in CHD in Iowa, age-specific death rates for both males and females younger than 65 years of age show no decreases in the past ten years.

Gender and Race/Ethnicity Disparities

Males showed higher premature CHD death rates than females. Males younger than age 65 had almost 3 times the rate for females of the same age

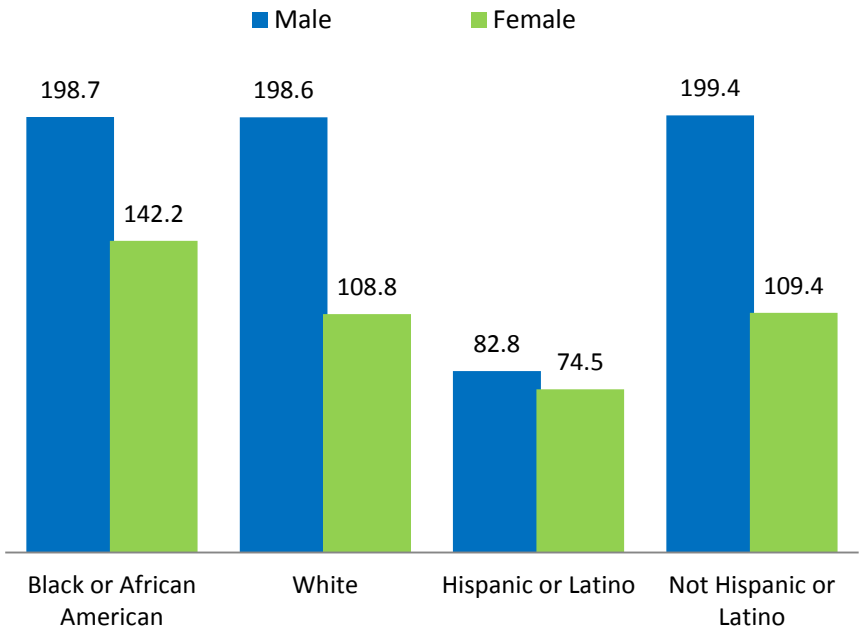
Table 1: CHD Death Rate/100,000 by Age Group and Gender, 2013 Iowa

	Male		Female		Ratio
Age group	Number	Rate	Number	Rate	between M/F
<45	48	5.2	12	1.4	3.7
45-54	177	85.3	67	32.4	2.6
55-64	418	209.1	134	66.4	3.1
65-74	489	410.1	237	180.9	2.3
75-84	626	966.5	496	567.9	1.7
85+	880	3,420.4	1,186	2,247.6	1.5

Black and white males showed about the same CHD death rates (2009-2013 combined); however black females exceeded white females by 33 deaths per 100,000: 142.2/100,000 vs. 108.8/100,000 during the same period.

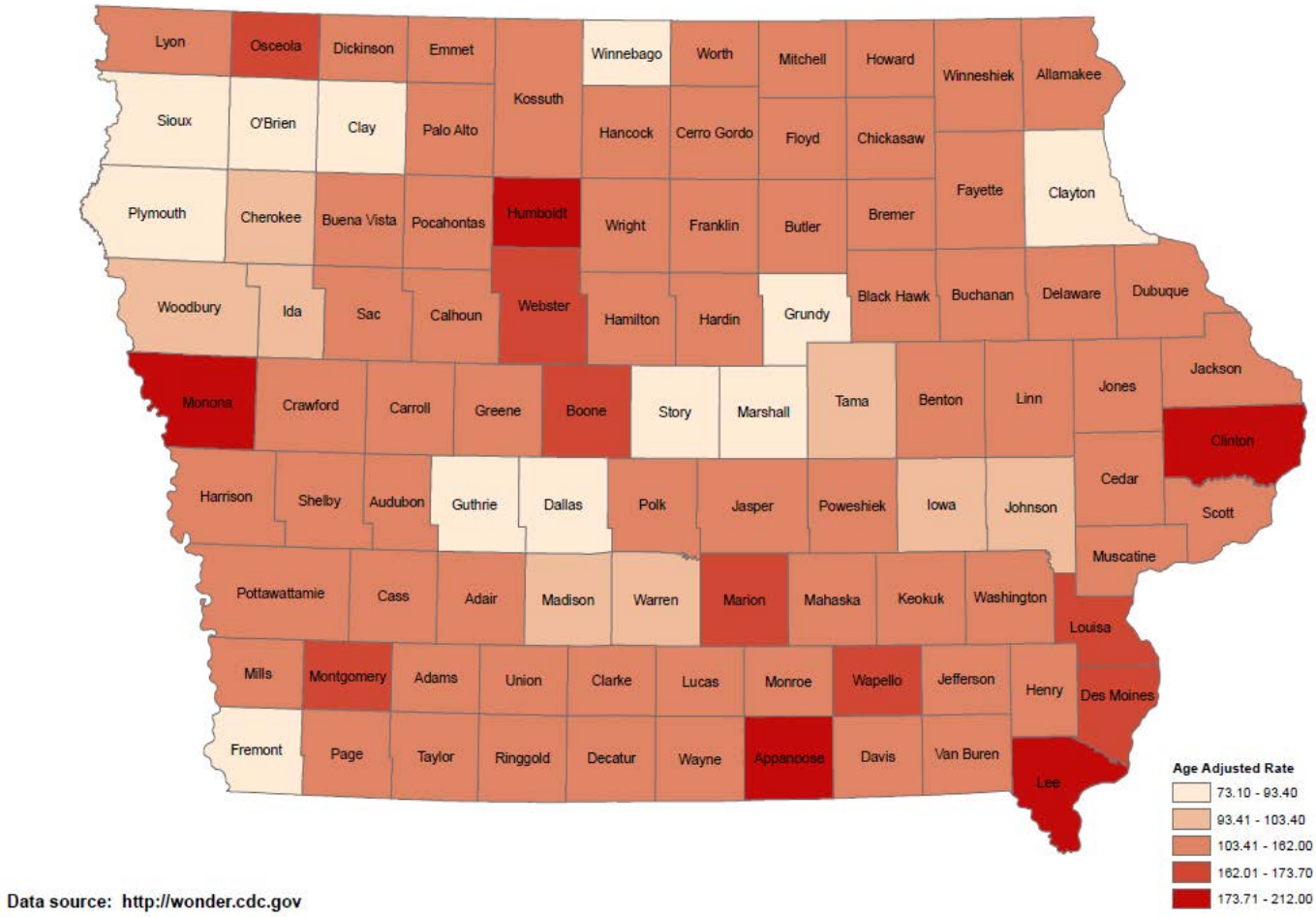
Non-Hispanic males and females had higher CHD deaths than their Hispanic counterparts.

Figure 4: Iowa CHD Death Rate by Race, Hispanic Origin and Sex (2009-2013)



Mortality by Geographic Variation

Figure 5: Age-adjusted Mortality Rate for CHD by County (2009-2013 combined)



Data source: http://wonder.cdc.gov

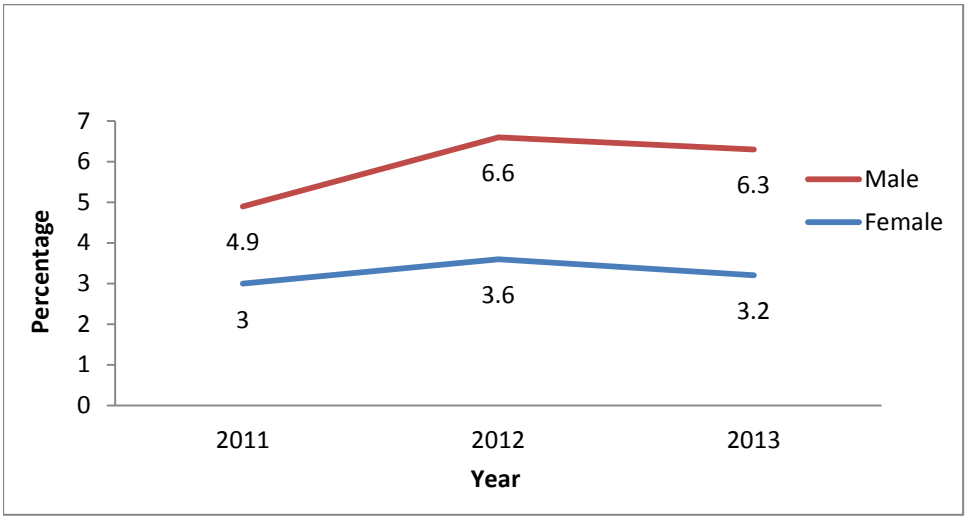
- **In 2009-2013 combined, CHD death rates ranged from 73.1 deaths/100,000 in Sioux County to 212 deaths/100,000 in Monona County.**
- **20 counties meet or exceed the 2020 goal of 103.4 deaths per 100,000.**

CHD Prevalence

The prevalence data for heart disease is collected through the Behavioral Risk Factor Surveillance System (BRFSS). In the past ten years, both Iowa males and females surveyed did not show significant changes in this self-reported response.

Similar to the mortality data, Iowa males had higher prevalence than females. In 2013, Iowa males (6.3%, 2013) had two times the prevalence rate of Iowa females (3.2%, 2013).

Figure 6: Prevalence of Acute Myocardial Infarction (Heart Attack) Among Iowa Adults



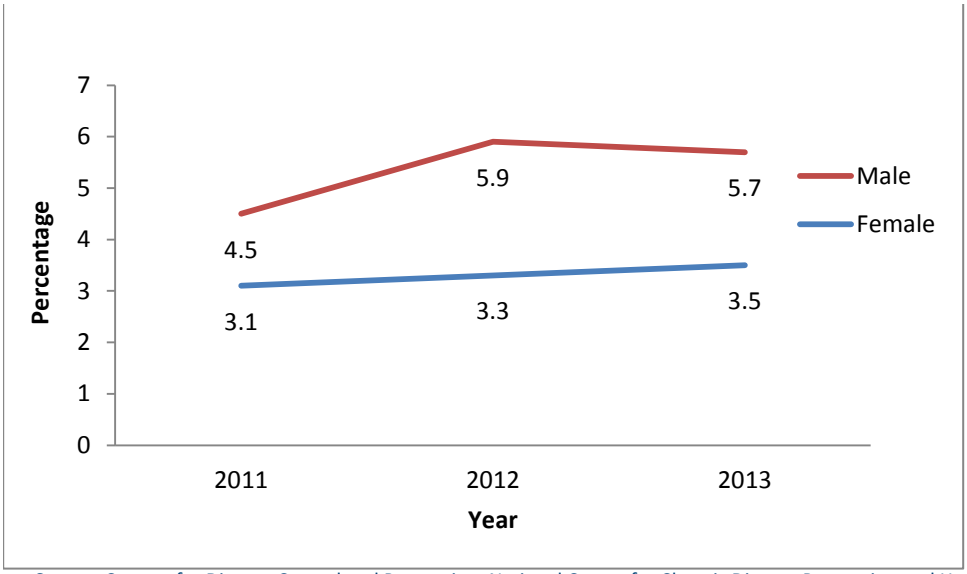
Source: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. BRFSS Prevalence & Trends Data [online],2015.

[Accessed Jul 08, 2015]. URL: http://wwwdev.cdc.gov/brfss/brfssprevalence/}

Among Iowa adults, 5.7% of males vs. 3.5% of females self-reported to being told they had CHD (2013). The ratio of males to females is the same as the one in the heart attack prevalence rate.

In 2013, about 6.9% of Iowans reported that they were told they either had a heart attack or coronary heart disease. The percentage represented about 110,000 Iowans (IDPH BRFSS Annual Report, 2013).

Figure 7: Prevalence of Coronary Heart Disease Among Iowa Adults



Source: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. BRFSS Prevalence & Trends Data [online].2015.

[Accessed Jul 08, 2015]. URL: http://wwwdev.cdc.gov/brfss/brfssprevalence/)

CHD Hospitalization

- In 2013, Iowa reported approximately 10,000 coronary heart disease (CHD) hospitalizations with an average hospital stay of 3.7 days. Among these CHD hospitalizations, 64% were males; of them, 44% were under age 65 vs. 32% for women.
- Like mortality data, CHD hospitalization rates have declined overtime.
- Despite decrease in hospitalization rates, the average hospitalization charges for CHD have increased from $24,650 in 2003 to $54,590 in 2013.
- In 2013, the total hospital charges for CHD (as the primary diagnosis) in Iowa were $538 million.
- More than two-thirds (69%) of CHD hospitalizations were covered by government funds (i.e. Medicare or Medicaid) as the first source of payment.

Note: *CHD: ICD-9-code: 410-414, 402, 429.2 for Iowa residents only.

Source: Iowa Inpatient Databases collected by the Iowa Hospital Association.

Figure 8: Age-adjusted Hospital Inpatient Rate for CHD, 2003-2013

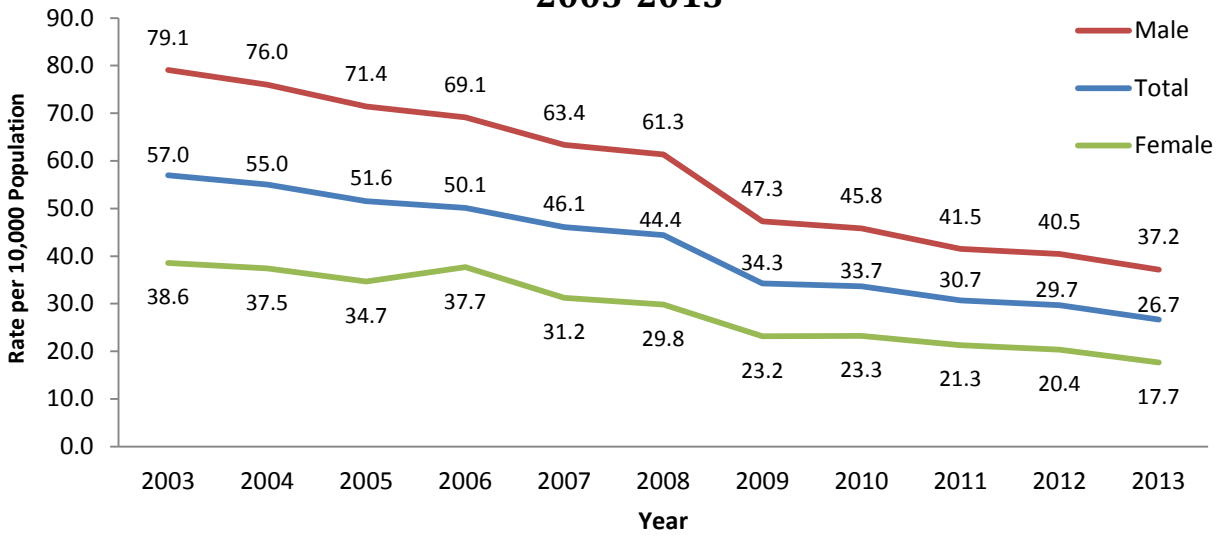


Figure 9: Average Hospital Charges for CHD, 2003-2013

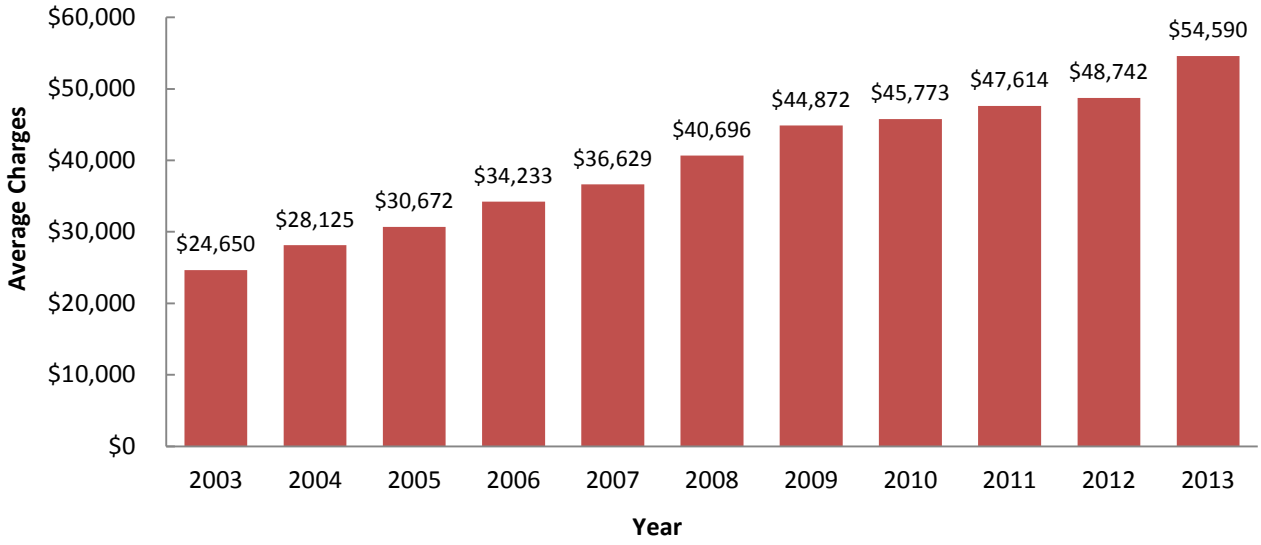
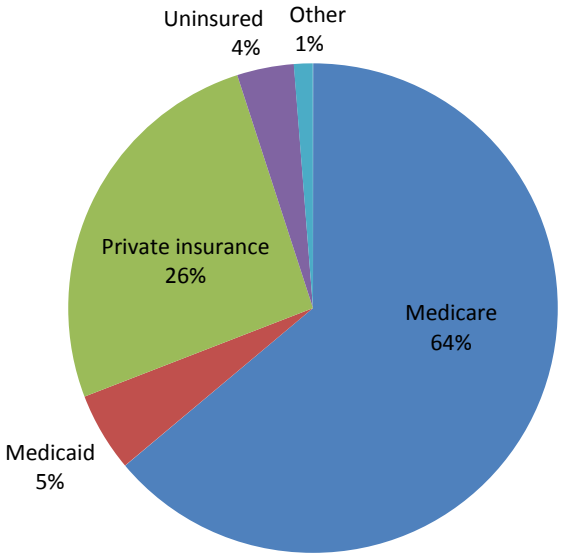


Figure 10: CHD Inpatient Charges by Payer Source, 2013



Making Use of this Information

Future Strategies

IDPH receives funding from the Centers for Disease Control and Prevention (CDC) for a grant program, *State Public Actions to Prevent and Control Diabetes, Heart Disease, Obesity and Associated Risk Factors and Promote School Health* through June of 2018. This funding provides funding for contracts and projects in clinical health systems and community organizations throughout the state of Iowa that will lead to clinical quality improvements and additional community projects that lead to better control of hypertension and diabetes A1c level management. These efforts will assist in the further reduction of coronary heart disease and stroke in Iowa's population.

A group of interested organizations and individuals have developed a Million Hearts® State Action Plan which also coordinates and unifies the strategies and actions of various partners in reducing the impact of coronary heart disease in Iowa.

Healthy People 2020 Goal: Reduce coronary heart disease deaths to 103.4/100,000

In 2013, the Iowa CHD death rate was higher than the new national Healthy People 2020 objective by 14 deaths/100,000 (117/100,000 vs. 103.4/100,000). If Iowa can reduce CHD by 2 deaths/100,000 in each of the next seven years, we will be able to reach the 2020 goal.

What are the implications of these findings?

- Iowa's CHD mortality rate was higher than the national average and this was the case for both males and females. There remains a need to implement additional evidence-based awareness, screening and risk factor reduction mechanisms to reduce overall CHD deaths.
- Currently, IDPH receives funding target women for heart disease and stroke screening and risk reduction. Since the male CHD death rate has always exceeded the female rate, there is a need for funding targeting men, especially younger men to eliminate premature CHD deaths.

Who works on heart disease prevention and control in Iowa besides IDPH?

- **Iowa Million Hearts State Action Plan partners**
- **The Iowa Healthcare Collaborative**
- **American Heart/Stroke Association-Mid Iowa Chapter**
- **University of Iowa, College of Public Health and College of Pharmacy**
- **The Iowa Chapter of the American College of Cardiology**
- **Telligen**
- **Iowa's YMCAs**
- **Area Agencies on Aging**
- **The Iowa Pharmacy Association**
- **The Iowa Primary Care Association**
- **The Iowa Hospital Association**

References:

1. 2009 Vital Statistics of Iowa: http://www.idph.state.ia.us/apl/common/pdf/health_statistics/2009/vital_stats_2009.pdf/
2. CDC WONDER at http://wonder.cdc.gov/
3. Division for Heart Disease and Stroke Prevention: Data Trends and Maps at CDC website: http://apps.nccd.cdc.gov/NCVDSS_DTM/Default.aspx
4. Health in Iowa Annual Report from the 2009 BRFSS: http://www.idph.state.ia.us/brfss/common/pdf/2009BRFSSannual.pdf/
5. State Statistics on Hospitalization: Iowa Inpatient Database collected by the Iowa Hospital Association.

This fact sheet was developed by IDPH supported by the Centers for Disease Control and Prevention (CDC) Cooperative Agreement #3UP58/dp004807-02SI-Revised/*State Public Actions to Prevent and Control Diabetes, Heart Disease, Obesity and Associated Risk Factors and Promote School Health Program*. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the CDC.